

WHAT IS CLAIMED IS:

1. A process for inhibiting the growth of microorganisms, said process comprising the step of contacting said microorganisms with an effective amount of an antimicrobial agent, said antimicrobial agent including a mixture of plant materials comprising *Origanum vulgare* L., *Thymus vulgaris* L., *Rosmarinum officinalis* L., and *Lavandula officinalis* L.
2. The process of claim 1, wherein said plant materials are present in substantially equal amounts.
3. The process of claim 1, wherein said antimicrobial agent further comprises *Cinnamomum zeylanicum* Nees.
4. The process of claim 1, wherein said antimicrobial agent further comprises *Hydrastis canadensis* L.
5. The process of claim 1, wherein said microorganisms are on a substrate capable of supporting growth of microorganisms and said process comprises contacting said substrate with said antimicrobial agent.
6. The process of claim 1, wherein said microorganisms are in or on a base material capable of supporting the growth of said microorganisms and where said process comprises dispersing said antimicrobial agent in or on said base material.
7. The process of claim 6, wherein said substrate is a food product.

8. The process of claim 1, wherein said composition further comprises a food compatible carrier.

9. The process of claim 1, wherein said antimicrobial agent further comprises olive leaf extract.

10. The process of claim 1, wherein said antimicrobial agent further comprises about 20 wt% to 40 wt% *Origanum vulgare* L., about 20 wt% to 40 wt% *Thymus vulgaris* L., about 10 wt% to 30 wt% *Rosmarinum officinalis* L., and about 5 wt% to 15 wt% *Lavandula officinalis* L.

11. The process of claim 10, wherein said antimicrobial agent further comprises about 5 wt% to 15 wt% *Cinnamomum zeylanicum* Nees.

12. The process of claim 10, wherein said antimicrobial agent further comprises about 0.001 wt% to 0.003 wt% *Hydrastis canadensis* L.

13. The process of claim 12, wherein said antimicrobial agent further comprises about 0.001 wt% to about 0.005 wt% olive leaf extract.

14. The process of claim 1, wherein said antimicrobial agent is combined with a component selected from the group consisting of anti-caking agents, flavoring agents, dispersing agents, emulsifying agents and mixtures thereof.

15. The process of claim 1, wherein said microorganisms are mold, bacteria or fungi.

16. The process of claim 1, wherein said antimicrobial agent comprises extracts of said plant materials in amounts effective to inhibit growth of said microorganisms.

17. The process of claim 1, wherein said plant materials are present in amounts to provide a microorganism-inhibiting amount of a compound selected from the group consisting of carvacrol, thymol, cinnamaldehyde, eugenol, cineole, camphor, α -pinene, rosmarinic acid, linalol, linalyl acetate, berberine and hydrastine, and mixtures thereof.

18. A shelf-stable composition, comprising:
a base material capable of supporting the growth of microorganisms, and
an effective amount of an antimicrobial agent to inhibit the growth of microorganisms on or in said substrate, said antimicrobial agent including a mixture of plant materials comprising *Origanum vulgare* L., *Thymus vulgaris* L., *Rosmarinum officinalis* L., and *Lavandula officinalis* L.

19. The shelf-stable composition of claim 18, wherein said antimicrobial agent further comprises an effective amount of *Cinnamomum zeylanicum* Nees to inhibit the growth of microorganisms.

20. The shelf-stable composition of claim 18, wherein said antimicrobial agent further comprises an effective amount of *Hydrastis canadensis* L. to inhibit the growth of microorganisms.

21. The shelf-stable composition of claim 18, wherein said antimicrobial agent is a coating on said base material.

22. The shelf-stable composition of claim 18, wherein said antimicrobial agent is dispersed in said base material.

23. The shelf-stable composition of claim 18, wherein said base material is a liquid, solid, or semi-solid.

24. The shelf-stable composition of claim 18, wherein said base material is a food product.

25. The shelf-stable composition of claim 18, wherein said base material is a food product and said antimicrobial agent is dispersed in a food-compatible carrier that is in contact with said food product.

26. The shelf-stable composition of claim 18, wherein said antimicrobial agent is admixed with a component selected from the group consisting of anti-caking agents, flavoring agents, dispersing agents, emulsifying agents, and mixtures thereof.

27. The shelf-stable composition of claim 18, wherein said antimicrobial agent comprises extracts of said plant material in amounts sufficient to inhibit the growth of microorganisms.

28. The shelf-stable composition of claim 18, wherein said antimicrobial agent further comprises an effective amount of olive leaf extract to inhibit the growth of microorganisms.

29. The shelf-stable composition of claim 18, wherein said plant materials are included in amounts to provide a microorganism inhibiting amount of a compound selected from the group consisting of carvacrol, thymol, cinnamaldehyde, eugenol, cineole, camphor, α -pinene, rosmarinic acid, linalol, linalyl acetate, berberine and hydrastine, and mixtures thereof.

30. The shelf-stable composition of claim 18, wherein said plant materials are selected from the group consisting of leaves, stems, flowers, extracts and mixtures thereof.

31. The shelf-stable composition of claim 18, wherein said antimicrobial agent further comprises about 20 wt% to 40 wt% *Origanum vulgare* L., about 20 wt% to 40 wt% *Thymus vulgaris* L., about 10 wt% to 30 wt% *Rosmarinum officinalis* L., and about 5 wt% to 15 wt% *Lavandula officinalis* L.

32. The shelf-stable composition of claim 18, wherein said antimicrobial agent further comprises about 5 wt% to 15 wt% *Cinnamomum zeylanicum* Nees.

33. The shelf-stable composition of claim 18, wherein said antimicrobial agent further comprises about 0.001 wt% to 0.003 wt% *Hydrastis canadensis* L.

34. The shelf-stable composition of claim 18, wherein said antimicrobial agent further comprises about 0.001 wt% to about 0.005 wt% olive leaf extract.

35. A preservative and stabilizing composition, comprising:
an antimicrobial agent comprising a mixture of plant material extracts of *Origanum vulgare* L., *Thymus vulgaris* L., *Rosmarinum officinalis* L., and *Lavandula officinalis* L. in amounts effective to provide an antimicrobial effect, and

a carrier for said antimicrobial agent, wherein said antimicrobial agent is present in said carrier in an amount effective to inhibit the growth of microorganisms.

36. The composition of claim 35, wherein said antimicrobial agent is effective in inhibiting the growth of fungi, bacteria, mold or yeasts.

37. The composition of claim 35, wherein said antimicrobial agent is effective in inhibiting the growth of microorganisms selected from the group consisting of gram-positive *Staphylococcus aureus*, gram-negative *Escherichia coli*, *Salmonella typhimurium*, *Klebsiella pneumoniae*, and *Pseudomonas aeruginosa*, acid-fast bacterium *Mycobacterium smegmatis*, the yeast *Candida albicans*, and *Aspergillus niger*.

38. The composition of claim 35, wherein said carrier is a liquid, solid, gel or paste.

39. The composition of claim 35, further comprising a component selected from the group consisting of anti-caking agents, flavoring agents, dispersing agents, emulsifying agents, and mixtures thereof.

40. The composition of claim 35, wherein said plant materials are present in amounts to provide a microorganism inhibiting amount of a compound selected from the group consisting of carvacrol, thymol, cinnamaldehyde, eugenol, cineole, camphor, α -pinene, rosmarinic acid, linalol, linalyl acetate, berberine and hydrastine, and mixtures thereof.

41. The composition of claim 35, wherein said antimicrobial agent further comprises an effective amount of *Hydrastis canadensis* L.

42. The composition of claim 35, wherein said antimicrobial agent further comprises about 0.001 wt% to about 0.005 wt% olive leaf extract.

43. The composition of claim 35, wherein said antimicrobial agent comprises about 20 wt% to 40 wt% *Origanum vulgare* L., about 20 wt% to 40 wt% *Thymus vulgaris* L., about 10 wt% to 30 wt% *Rosmarinum officinalis* L., and about 5 wt% to 15 wt% *Lavandula officinalis* L.

44. The composition of claim 35, wherein said antimicrobial agent comprises about 5 wt% to 15 wt% *Cinnamomum zeylanicum* Nees.

45. The composition of claim 35, wherein said antimicrobial agent further comprises about 0.001 wt% to 0.003 wt% *Hydrastis canadensis* L.